Vol. 69. No. 5. Issue No. 4114 87-104

Feb. 2, 1957

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The Journal of the British Veterinary Association

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The
VETERINARY RECORD

Founded by William Hunting, F.R.C.V.S., in 1888

7, MANSFIELD STREET, PORTLAND PLACE, LONDON, W.1. MUSEUM 6541

No. 5 FEBRUARY 2nd, 1957 Vol. 69

Registered for Transmission as a Newspaper *Price 2s. post free*

Petrol Rationing

From correspondence published in this issue, and from other information received, it seems clear that, in some areas at least, veterinary surgeons are apprehensive about the extent of their supplementary petrol allocations. It is timely to refer to this matter because, among our farmer clients, and in other sections of the community, there seems to be an impression that, because veterinary surgeons have been included in the " priority " class for supplies of petrol they are getting all they need.

Voluntary liaison officers have been appointed by the B.V.A. to make special representations to regional petroleum officers in cases where members of the profession cannot obtain satisfaction; and the admirable work done previously, during the long years of rationing, was an example of how valuable the work of the liaison officers can be. Nevertheless, it must be hoped that our need for enough petrol to maintain the full mobility of members in practice will continue to receive sympathetic understanding at Ministerial level. The practising veterinary surgeon is wholly dependent on his motor car; and as he is indispensable to the nation's agriculture—its food, in other words—the logic of our claim would seem to be indisputable.

It is the future even more than the immediate present which gives rise to uneasiness. The latest news suggests that the clearing of the Suez Canal is still far from being accomplished, and the other known difficulties in Syria and elsewhere forbid optimism. The situation in the spring and early summer, so far as supplies of petrol are concerned, may be as bad, or worse, than it is now, and in that case the needs of the profession may become urgent. We must hope that the traditional reluctance of professional men to make a clamour in the press and elsewhere will not have the effect of making it appear that our needs are less urgent, or of less public importance than they really are.

In the Association's name, paragraphs have been sent to the press in all parts of the country, including the farming press, appealing for calls to be made to veterinary surgeons early in the day, so as to enable them to plan their journeys as economically as possible. In addition, many veterinary surgeons have sent notices directly to their clients along similar lines, and those who have not yet taken this precaution would be well advised to do so. But however economically work is planned, there is a minimum below which no further economies in travel are practicable, and in well-organised practices, that minimum may not be substantially different from the mileage covered in normal times. No one duplicates journeys and inflates costs without good cause. It is because the practical limit of petrol economy has comparatively narrow bounds that continued generous understanding of our needs is hoped for. The Association has concerned itself closely already, and will spare no effort to keep our needs within the notice of those whose duty it is to allocate petrol. In this connexion it is necessary to stress that, though it may seem vexatious, it is to the practitioner's advantage to give full information, with supporting evidence where practicable, in applying for supplementary allowances. The work of the liaison officers also will be more effective if this is done.

Apart from the supply of petrol there is the problem of its high price. The appropriate committee of the B.V.A. is examining the economics of the matter, so far as L.V.I. mileage allowances are concerned, and members in private practice will decide, each according to his local circumstances, how this fresh addition to overhead expenses is to be faced. With certain makes of motor car it is possible to de-tune the engine without much loss of performance in order to use the cheaper commercial petrol; but it is a matter for expert advice to what extent this practice is either feasible or wise. Certainly, having regard to the mileages covered by veterinary surgeons, especially in agricultural practice, the new cost of petrol is indeed a formidable and unwelcome addition to expenses. It must be hoped most earnestly that the clearance of the Suez Canal, and the solution of political problems in that area will proceed with reasonable speed. In the meantime, members may be assured that their Association, which is in harmonious contact with the Ministries concerned, is doing, and will continue to do, everything possible to help them.

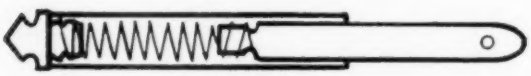
A New Intra-medullary Splint

BY

SALO JONAS

New Haven Small-Animal Hospital, New Haven, Conn., U.S.A.

THIS paper describes the Jonas self-retaining medullary extension splint (Jonas & Jonas, 1954) which is designed to simplify the reduction of fractures of all long bones through open reduction, in one operative field. The splint is especially suitable for application in those fractures which present the greatest challenge to the orthopaedist, such as comminuted fractures, shattered bones, supraepiphysial fractures of the femur, fractures of tibia, ulna, radius and humerus, and all fractures where one of the fragments is much shorter than the other. It differs from all other types of fracture fixation in that it is designed for permanent implantation within the full length of the medullary canal of the fractured bone, and is held automatically in place, and fixed within the bone itself, through the regulated tension of a spring, without the necessity of using wire or other suture material. The splint has three component parts, and a cap, all made of the same austenitic stainless steel so as to eliminate the possibility of any electrolytic reaction in the metal. It is made in 12 sizes; three diameters with four lengths in each diameter.



A diagram of the splint

The sleeve is hollow and cylindrical throughout. One end is closed with a cap, and two tiny holes are bored near the open end for the insertion of a cotter-pin, or key, to hold the pin within the sleeve during reduction. The cap is fitted to the sleeve by compression, and not welded, and is shaped so that it can be grasped with a fine rat-tooth forceps.

The pin is round, and the nose is spherical to facilitate easy penetration into the opposing fragment when the cotter-pin is withdrawn.

The spring is the heart of the invention and controls the force and length of the projection of the pin out of the sleeve.

The selection of the splint is made on the basis of diameter and length, the aim being to choose a unit where the sleeve corresponds as much as possible to the straight portion of the medullary canal of the longer fragment, and the pin protruding from the sleeve to the straight portion of the medullary canal of the shorter fragment. The ideal length of the splint when it is fully extended, is about ¼ inch longer than the sum total of the lengths of the straight sections of the medullary canal of both fragments. However, when the pin is too long for the shorter fragment, as happens in fractures close to the epiphysial line, the medullary canal of the longer fragment is reamed out to accommodate the sleeve and a portion of the pin, with the result that when the cotter-pin is withdrawn, the spring projects the pin into the shorter fragment, and at the same time shifts the sleeve deeper into the longer fragment as far as it has been reamed out, thus achieving secure and balanced anchorage. Before autoclaving the instruments for the operation, the pin is manually pushed into the sleeve, where it is held in place by the insertion of the cotter-pin or key. When the shorter fragment is brought in apposition, the cotter-pin is withdrawn and the released pressure of the spring projects the pin into the shorter fragment, allowing the splint to adjust itself automatically within the medullary canal.

I have used the splints on 36 cases and have follow-up records on all of them, some for as long as four years.

	Femur	Tibia	Radius & Ulna	Humerus
Dogs	12	7	4	5
Cats	6	2	—	—

The first experimental splints were made by hand, and the sleeve was made of soft annealed stainless steel of thin gauge. Two of these first splints broke and one splint bent during the process of bone repair. Even in these three cases the dogs eventually had functional use of the involved limbs. There has been no case of bending or breaking except for these three. When the splint was manufactured and released to the veterinary profession last summer, we made the sleeve of hard-temper metal and increased the thickness of the wall so as to make the sleeve as strong as the pin. All the other 33 cases healed by first intention and showed perfect recovery. The splints have been used in difficult cases, including two fractures involving the distal epiphysis of the femur, and an explosion fracture of the tibia where about one-quarter of the bone was destroyed. So far I have not had a case of non-union, osteomyelitis or pathology where the splint had to be removed, but certainly these possibilities must be anticipated. In a case of non-union the bone fragments could be exposed, the splint cut with sterile bone cutters and then removed in two parts. Should the necessity arise for the removal of the splint following a complete bone repair, it could be accomplished either through the trochanteric fossa, or by cutting out a sagittal section of the bone which would be grafted back in place following withdrawal of the splint. This would be a difficult major operation. This difficulty of withdrawal is a definite weakness in the splint, but it is greatly offset by the unique advantages it possesses in accomplishing complete bone repair in a relatively large percentage of cases where other means of immobilisation would have less chance of success.

Independent corroboration of the compatibility of the splint with osteogenesis in dogs comes from Professor Charles O. Bechtol, Head of the Department of Orthopedic Surgery, Yale University Medical School (by personal communication). Professor Bechtol examined a tibia of a dog which he euthanised three months after his experimental operation was performed. The bone showed perfectly normal osteogenesis and no pathology could be detected. Professor Bechtol also studied a left radius and ulna of a Setter dog three years and three months old, which was killed by a car one year and nine months after the insertion of the splint. The radius was less than $\frac{1}{16}$ inch shorter than the corresponding right radius which was also presented for examination. The fractured bone showed no sign of pathology, and it was stronger than the normal radius in that it took approximately 25 per cent. more pressure to break it. In both these cases there was not the slightest evidence of any incompatibility between the splint and osteogenesis. Both the splints were retrieved, and no trace of corrosion could be detected in either one by Professor Bechtol.

Professor W. O. Brinker, Head of the Department of Surgery and Medicine, College of Veterinary Medicine, Michigan State University, East Lansing, Michigan, writes: " The experimental dogs in which we have placed your splint seem to be getting along very well; however, we have not sacrificed any for an inside look thus far. I have also used the splint on two clinical cases. Both of these were fractures of the radius and ulna. One was in a Pointer and the other in an Afghan Hound. Both seemed to be progressing very satisfactorily at my last contact with them, which was about three months ago."

Dr. B. O. Woodworth, Assistant Professor of Small-Animal Surgery, Colorado A. and M., School of Veterinary Medicine, Fort Collins, reduced a tibial fracture with the Jonas self-retaining intramedullary splint. Recovery was uneventful. Two months to the day of surgery, the animal was euthanised and the tibia recovered, disclosing a firm callus formation. The firm position of the pin was revealed on sagittal section of the involved bone. I would point out that the self-retaining medullary extension splint is not the only one designed for permanent implantation. The Livingston bar, for example, which is made of vitalium, has been used in human orthopaedic surgery for the last six years. However the Livingston splint is made of one solid bar, and must be shuttled from the longer fragment into the shorter so that it can give support only to a short section of the bone. The Jonas medullary splint, because of its extension mechanism, can fill the entire length of the medullary canal of both fragments, thus giving more support to a fractured or/and shattered bone during the process of healing.

It would seem that the extension splint is useful to the general practitioner since more than 900 replacement splints have been requested by veterinarians in the U.S.A. since last summer.

The following cases have been chosen to demonstrate various stages of bone repair with the Jonas splint.

Case I. Compound fracture of the left tibia and fibula in a male Spitz dog, 11 years old. In order to study various stages of this repair, radiographs were taken over a period of almost three years. Fig. 1 shows a spiral fracture with about $1\frac{1}{2}$ inches overriding at the distal end of the tibia and fibula, as well as two longitudinal fractures of the distal fragment of the tibia, extending almost to the epiphysis. The dog was given pentobarbital sodium for general anaesthesia, and the operative area was prepared for aseptic technique. Incision of the skin was made about $2\frac{1}{2}$ inches long at the medial surface, over the fracture. The flexor muscles were separated by blunt dissection and the ends of the broken bones exposed. The assembled unit was then inserted into the reamed-out canal of the proximal fragment, and the spiral fragment of the distal bone aligned. The compression spring was released with the withdrawal of the cotter-pin, and the pin projected itself deeply into the canal of the distal fragment, beyond the weakened section of the bone. Crystalline penicillin G using normal saline as a diluent was infiltrated through the operative area before closing. Muscles were approximated with plain double 0 catgut, and the skin with silkworm sutures. 300,000 units of procaine penicillin G in aqueous suspension was administered daily for four days. Sutures were removed on the sixth day. A wooden splint was applied for additional support and kept on for seven days. Ten days after reduction the dog was using the leg without any signs of discomfort. In spite of the dog's advanced age of 11 years, and the complication of a spiral fracture, which it was thought might have retarded the process of ossification, a radiograph taken six months after reduction (Fig. 2), shows that complete bone repair was accomplished with the formation of a solid permanent callus. Radiographs taken one year, two years, and three years after the operation revealed no additional changes after six months.

Case II. This concerned a mid-shaft fracture of the right femur with overriding in a four-month-old Terrier puppy (Fig. 3). The dog was anaesthetised and prepared as in Case I. An incision was made about $2\frac{1}{2}$ inches long over the fracture, slightly anterior and parallel to the line between the trochanter major and lateral epicondyle of the femur, cutting through the skin and tensor fasciae latae. The vastus lateralis was separated from the biceps femoris by blunt dissection. The distal fragment of the femur, being slightly wider in diameter, was reamed out down to the epiphysis to receive the sleeve, and the proximal fragment to receive the pin. Fig. 4, taken 138 days after reduction, shows that the splint did not move its position in relation to the fracture line, and that the growth of the bone, and the process of ossification is completed with a solid and healthy callus. This case was followed with radiographs for nearly three years and careful measurements of both femurs were taken during this time. The bones grew to their full length following the fracture, and there is only $\frac{1}{16}$ inch difference in length between the right and left femur indicating that there is good compatibility between the splint and living tissue.

Case III. This case (Fig. 5), shows a jagged, transverse, compound fracture of radius and ulna close to the distal epiphysis, with displacement and overriding, in a Collie bitch eight months old. In order to reduce this fracture an incision was made over the anterolateral aspect of the radius, and the extensor carpi radialis was separated from the deep digital extensor by blunt dissection, carefully avoiding injury to the blood vessels and tendons. The splint was inserted into the radius, and a supporting bandage gave adequate immobilisation to the ulna which was not pinned. A radiograph taken one month after the operation showed an abundant and normal formation of osteogenic tissue. Radiographs were taken periodically for three years, which showed that the bone repair was completed within six months (Fig. 6), and no changes were evident after that time.

Case IV. Comminuted fracture of the left humerus in a seven-month-old German Shepherd dog, with about ¾ inch overriding (Fig. 7). The fracture involved the distal quarter of the humerus which suffered additional damage extending almost to the epiphysial line, as evidenced by the ¾ inch fragment which had become detached from the bone. The dog also suffered a transverse fracture of the left scapula, not seen on this radiograph. The incision was made through the skin at the medial epicondyle, to expose the shaft of the humerus, which is easily palpated in this region. The biceps and the medial head of the triceps were separated by blunt dissection and the blood vessels and nerves exposed and deflected anteriorly or posteriorly so as to avoid severance by the jagged ends of the fractured bones. As the proximal fragment was much longer than the distal, it was reamed out to receive the sleeve, and reduction was affected by releasing the pin into the short distal fragment. The ¾-inch loose fragment was placed around the sleeve of the splint, bridging the open space, in the hope that it would eventually help to fill in the gap with new osteogenic tissue. Additional support for immobilising the fracture was provided by a plaster of Paris cast beginning below the humero-radial articulation and extending over the fractured humerus and scapula. When the cast was removed after 18 days, the dog was putting good weight on the fractured leg. A radiograph taken that day showed that the loose bone fragment was being incorporated into the newly forming osteogenic tissue extending from the middle third to the distal end of the humerus. An X-ray taken 65 days after the reduction showed a large but normal callus formation. The grafted bone particle was united with the distal fragment, and the space was gradually filling in with new tissue. A radiograph taken seven months and 16 days after reduction (Fig. 8), clearly reveals the splint within the repaired humerus with two-thirds of the pin inside the sleeve, and one-third extended into the distal fragment where it is deeply embedded. The dog showed no trace of lameness and had full use of the humero-radial articulation.

Case V. A two-year-old cat with an explosion fracture of the left tibia and fibula at the epiphysial line, caused by gunshot injury (Fig. 9). Prognosis was most unfavourable because this was a compound, comminuted fracture, eight days old, which had become infected and was suppurating, where the distal part of the tibia was destroyed and shattered into very numerous fragments, and where the remaining bone and surrounding muscles were devitalised by infection and many lead particles . There was hardly any healthy bone left at the distal end of the tibia, and the fibula was fractured and displaced. Reduction was accomplished by inserting the sleeve through the traumatised proximal section of the bone penetrating about ¾ inch into the healthy part of the tibia. Only about ¼ inch of pin could be projected in the distal fragment for anchorage. Two ½-inch fragments of bone were placed against the bone to serve as a graft (Fig. 10) but numerous bone fragments and many lead particles were left in the surrounding tissue so that the operation would not be unduly prolonged. The splint bridged the open space in the tibia where the bone was destroyed, providing a connexion between healthy bone in both fragments, while the fractured, but less severely damaged fibula, gave the tibia additional support. Inasmuch as there was not enough bone left for solid anchorage, we did not rely entirely on the self-retaining splint for immobilisation, and a wooden splint was applied for 14 days. The area was infiltrated with crystalline penicillin solution using normal saline as a diluent. The cat was injected with 300,000 units of procaine penicillin morning and night for a week, and the wound was dressed every other day for the same length of time. Surprisingly, there was hardly any suppuration after the second dressing, and the cat began to use the injured leg in a few days. Radiographs taken 11 days and 76 days after reduction showed that the splint remained in the same position as when first inserted. Another radiograph was taken nine months after reduction (Fig. 11), and shows the splint surrounded by many islands of ossification, integrating into a good callus. The ½-inch grafts around the sleeve have taken hold, and the open space is gradually being filled in with new bone formation. The lead particles which were not removed have not changed their position, and have become encapsulated. At the present time, which is almost three years since reduction, the cat shows no sign of lameness or discomfort, climbs trees, and leads an active country life.

Case VI. This was a comminuted oblique fracture of the left femur in a five-month-old female puppy, extending from the proximal to the distal third, and with a loose fragment (Fig. 12). An M-1 splint (new improved model) was inserted into the reamed-out canal of the distal fragment, and the pin projected into the proximal fragment. Inasmuch as this fracture extended almost from one end of the medullary canal to the other, the cancellus tissue had to be reamed out deeply to give strong anchorage at both ends, beyond the fracture lines. A radiograph (Fig. 13), shows a perfect reduction of the fracture with both ends of the splint extending close to the epiphysial lines. No additional means of immobilisation were used in this case, and the dog was able to stand on its hind legs and walk well on the day of discharge, nine days after the operation.

(*Continued at foot of col. 1, facing page*)

FIG. 1.—Case 1 : spiral compound fracture at the distal end of the tibia and fibula, with displacement and about 1½-inch overriding. Note two longitudinal fractures of distal fragment of tibia extending to epiphysis.
Photograph reduced in size.

FIG. 2.—Case 1 : positive photograph (actual size) from radiograph of same tibia as in Fig. 1, taken six months after reduction. Repair completed with healthy bone formation.

FIG. 3.—Case 2 : transverse mid-shaft fracture of right femur with overriding in a four-month-old puppy.

FIG. 4.—Case 2 : repair of fracture completed with healthy permanent callus 138 days after reduction. Fracture line barely visible. Note splint in same position relative to fracture line and about ¾-inch space between epiphysis and sleeve due to puppy's growth.

FIG. 5.—Case 3 : transverse, compound fracture of radius and ulna with displacement and overriding.

FIG. 6.—Case 3 : six months after the reduction, the splint remained in the same position. The repair was complete, with healthy permanent callus. Note the clear space between the ulna and the radius.

FIG. 7.—Case 4 : comminuted fracture of left humerus in a seven-month-old German Shepherd dog.

FIG. 8.—Case 4 : seven months after reduction. Grafted bone particle united with distal fragment.

FIG. 9.—Case 5: explosion fracture of left tibia and fibula at the epiphysial line, caused by gunshot injury, in a two-year-old cat. Section of tibia at distal end destroyed and shattered

FIG. 10.—Case 5: sleeve anchored in healthy bone of proximal fragment, bridging over shattered section and extending to the epiphysis of the distal fragment close to the tarsal joint. Note two ½-inch fragments of bone and many small spiculas of bone around the sleeve to serve as a graft. Note also many lead particles in surrounding tissue.

FIG. 11.—Case 5: nine months after reduction. Gap between fractured bones filled with new healthy callus, and repair completed.

FIG. 12.—Case 6: comminuted oblique fracture of left femur in a five-month-old female puppy, extending from the proximal to the distal third.

FIG. 13.—Case 6: perfect reduction with fracture line barely visible.

Displacement of the Bovine Abomasum

BY
COLIN WOOD
Dumfries

THE condition to be described is that in which the fundic portion of the abomasum migrates from the right hypochondrium up into a variable position between the rumen and the left abdominal wall. The displaced viscus becomes tympanitic and is maintained in this abnormal position both by reason of its tympany and by the mass of the rumen. The reticulum is displaced upwards and its cavity tends to be obliterated by the pressure of the abomasum.

History

This condition was first described by Begg (1950). Ford (1950), Jones (1952), and Hebeler (1954) recorded cases encountered during laparotomy operations. Moore *et al.* (1954) recorded their observations on 33 cases of which 21 recovered following surgical treatment. Marr & Jarrett (1955) reported on one case complicated by peptic ulceration. A recent paper by Begg & Whiteford (1956) emphasised the importance of this clinical condition as a cause of post-parturient digestive upset. Of the 36 cases observed by them, 17 appeared to recover on manipulative rolling and two on withholding food for 48 hours.

Aetiology

Moore *et al.* suggested that the gravid uterus appeared to be the cause of this derangement. Begg & Whiteford's findings were in agreement with this suggestion and they suggested further that parturition, with its consequent rearrangement of the abdominal organs, precipitated the onset of symptoms. This would appear to explain the majority of cases, but there are exceptions. Marr (in a private communication) has observed three cases where the onset of symptoms was delayed until four months after calving. Jones (1952) recorded the condition in a three-month-old calf and the present writer has observed it in a 10-week-old calf.

One case encountered by the writer showed symptoms for 14 days. Operation was decided upon but, before opening the abdomen, examination showed little departure from normal. Laparotomy proved negative for the displaced abomasum. This animal appeared to improve for some time and then reverted to its original condition. This cow was sent to Glasgow Veterinary Hospital and laparotomy, 14 weeks after the original operation, showed the abomasum high up on the left side. At this time the animal was 10 weeks pregnant.

Symptoms

Not infrequently the animal is noticed to have a slight digestive upset before calving. This may take the form of a short bout of diarrhoea or just a few days' inappetence. Occasionally she presents herself as a clinical case before calving.

After calving the animal develops an intermittent appetite, *i.e.* eating moderately well for two or three days and then one or two days' inappetence. Acetonaemia may develop at this stage. The faeces are usually normal in consistency, passed infrequently, and in small amounts. Loss of condition is fairly rapid, milk yield is poor, and short bouts of diarrhoea may occur.

Sometimes animals with this condition show only slight digestive upset and a milk yield of approximately half that expected by the owner. In these cases body condition is maintained and oestrus sometimes exhibited.

Clinical Signs

In some instances the distended viscus appears as a bulge in the left sublumbar fossa. This shows up more clearly when the animal has been close clipped prior to operation.

Temperature, pulse, and respiratory rates vary depending on the type of case. The more severely affected have a rise in temperature (102.5° to 103.5° F.), increased pulse rate (85 to 100+ per minute), and respiratory rate (40 to 50 per minute): whereas some of the long-standing cases, especially where appetite has been depressed for some time, record subnormal temperatures and pulse rates of 40 to 50 per minute.

Rumen sounds are not heard over the area occupied by the abomasum on the left side of the abdomen. This area, in an individual animal, may alter position from day to day. Rumen sounds, where heard, are depressed, no doubt a reflex action of the distension of the abomasum, and their depression is in direct proportion to the distension of that organ (Phillipson, 1939). Reticular sounds are heard in some of the milder cases but are not heard in cases of gross dis-

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A New Intra-medullary Splint.—*Concluded.*

Summary

This paper describes the successful repair of fractures of long bones with the Jonas self-retaining medullary extension splint, and demonstrates the complete compatibility of the splint with living tissue, and non-interference with the normal growth of the bone in young animals. It is abridged from the paper "A New Intra-Medullary Splint" by Salo Jonas, read *in absentia* by Mr. L. C. Vaughan, Reader in Surgery, Royal Veterinary College, before the Central Veterinary Society, on February 2nd, 1956.

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placement. Auscultation of the area where rumen sounds are blanketed, elicits abnormalities varying from high-pitched tinkling to mild splashing or "bleeping" sounds. The former are heard where the displacement is high up and the tympany pronounced; the latter in the milder type of case, or in the case which has partly relieved itself.

Percussion is of some value as an aid to diagnosis. There is increased resonance over the area where rumen sounds are blanketed and this resonance depends on the amount of abomasal tympany present. Frequently it is more pronounced than that found over the pulmonary area.

The displaced viscus may sometimes be palpated behind the last rib in the left sublumbar fossa. Forcible palpation of the left hypochondrium, together with auscultation higher up on the left side, *i.e.* about the 10th intercostal space, will elicit sounds caused by fluid being splashed about in a tympanitic viscus.

By rectal examination the exact state of the rumen as regards tympany can be assessed. Although the rumen may be reduced in size it may appear to be displaced towards the right side.

Diagnosis

A firm diagnosis can be established on a consideration of the symptoms and clinical signs. The abnormal tinkling sounds are taken as characteristic of the condition. Diagnosis can be confirmed by left flank laparotomy.

Prognosis

The prognosis is favourable in that spontaneous recovery may take place and proper surgical treatment will give a satisfactory result.

Treatment

If acetonaemia is present glucose injections are indicated. Depending on the condition of the animal, a reasonable time should be allowed to elapse so that spontaneous recovery may take place.

(a) Starvation and manipulative rolling as practised by the writer does not appear to increase the number of spontaneous recoveries.

(b) A series of cases treated by left-flank laparotomy, evacuation of the rumen, and manual replacement of the abomasum gave poor results due to peritonitis caused by disseminating infective material from the rumen incision.

(c) Four cases treated by left-flank laparotomy and correction without opening the rumen gave the following results:—

Case	Pre-operation record	Date of calving	Date of operation	Post-operation record	Date of calving
A	Heifer	28/10/54	24/11/54	10,134 lb.	23/1/56
B	Heifer	3/12/54	1/12/54	Graded off grass	—
C	11,510 lb.	10/12/54	7/1/55	9,820 lb.	3/3/56
D	12,361 lb.	26/1/55	15/3/55	10,040 lb.	6/2/56

It will be noticed that Heifer B was operated on before calving. This animal was carrying twins and calved in such poor condition that she was never milked. In Cow D the condition recurred at the following parturition and was corrected by the method of double laparotomy and fixation (see method (d) below).

The results obtained by treatment (c) were quite good. However it was found that satisfactory replacement of the displaced viscus by manipulation through an incision in the left flank was not always easy. It was felt that any reduction in the amount of this manipulation would correspondingly shorten the convalescent period.

(d) Since the treatment of choice involves a double laparotomy; a broad band, extending across the back and down both sides, is close clipped and scrubbed up. Anaesthesia of both sides is obtained by either paravertebral nerve block or simple local infiltrations. The left abdominal wall is opened as for rumenotomy. The abomasal wall is picked up by tissue forceps, and a cannula, with length of rubber tubing attached, is inserted to relieve the tympany. This process may be hastened by passing the hand into the abdomen and applying pressure to the abomasum. A purse-string suture, picking up the abomasal wall round the cannula, is inserted and tightened on the withdrawal of the cannula.

A similar abdominal opening is made in the right sublumbar fossa. The duodenum can now be found running upwards and backwards slightly below the level of this opening and suspended between the meso-duodenum and the superficial part of the greater omentum. The duodenum is now traced downwards and forwards until the pylorus is reached and traction here will correct the displacement.

The abdominal wounds are closed in the usual manner, except that on the right side the part of the greater omentum which is attached to the pylorus is included in the first layer of sutures. This method of fixation is adopted to prevent displacement at a future date.

Complete results of this method of treatment are not to hand but it is already apparent that this operation is followed by an immediate improvement in the animal's appetite, condition, and milk yield. This is in contrast to the results obtained with other methods of treatment where the period of convalescence has tended to be much longer. This is an important factor as the condition usually affects animals in peak lactation and unless improvement is rapid there is likely to be a severe adverse effect on the current lactation.

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A Further Note on the Examination of Canine Sera for Evidence of Leptospirosis

BY

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THE prevalence of kidney degeneration in the older dog is generally accounted for, at least in part, by the assumption of early infection with leptospira, chiefly *L. canicola*. This belief has been supported by the relatively high incidence of infection and carrier-rate observed by many workers, notably Stuart (1946), Broom & McIntyre (1948), Joshua & Broom (1949), and Broom & Robertson (1951).

Although *L. canicola* and *L. icterohaemorrhagiae* are the only two spirochaetes commonly found in Britain, it has been suggested by Ward (1954) and corroborated by McDonald (1955) that leptospiroses are found whenever and wherever they are sought. As *L. canicola* appears to be practically the only species not requiring a rodent host, infection being transmitted directly from dog to dog, chiefly in the urine, the absence of strains other than *L. icterohaemorrhagiae* is therefore attributed to the lack of most of the rodents which carry the other strains. The species of wood mouse *Apodemus sylvaticus* is, however, native in Britain and has been shown to carry *L. sejroe* and *L. bataviae* and possibly *L. grippotyphosa*, while two other species of rodent, *Erotomys glareolus* and *Micromys minutis*, which are also native, are believed to carry *L. grippotyphosa* and *L. bataviae* respectively. It has also been shown by Varela *et al.* (1954) that the tick *Ornithodorus nicollei* is able to carry leptospira, but its power to transmit them is not yet definitely proven.

Materials and Methods

A number of canine sera were tested for the presence of antibodies to five strains of leptospira, using the agglutination technique of Schuffner & Mochtar (1927). The strains chosen were *L. canicola*, *L. icterohaemorrhagiae*, *L. grippotyphosa*, *L. hyos* (*mitis* Johnson), and *L. pomona*, the latter being included because of its common occurrence in cattle in other countries. All sera examined had been submitted by veterinary surgeons practising in different parts of England, for a variety of diagnostic tests, only some having been sent in specifically for the agglutination test for leptospirosis.

Results

Of 200 sera examined, 34 were positive with *L. canicola*, 11 with *L. icterohaemorrhagiae*, one with *L. hyos*, and one with *L. pomona*. None was positive with *L. grippotyphosa*. The titre varied from 1:30 to 1:3,000 with *L. canicola* and from 1:30 to 1:1,000 with *L. icterohaemorrhagiae*. These results are set out in Table I below.

Discussion

The proportion of sera found positive with *L. canicola* is less than half that found in an earlier survey completed 18 months previously (Davies, 1955), when 41.6 per cent. of the sera examined were positive. This result appears to confirm the suggestion made then that the fall observed in the carrier rate for leptospira was due to the extensive use of antibiotic therapy, the effect of this treatment becoming more apparent with continuing use. The proportion of sera positive with *L. icterohaemorrhagiae* is twice that observed in the earlier survey, namely 5.5 against 2.8 per cent., but the higher figure includes two clinically suspected cases of *L. icterohaemorrhagiae* with jaundice, both of which were fatal.

The two sera which agglutinated only with *L. hyos* and *L. pomona* respectively seem to suggest that there may be other strains of leptospira in Britain although, because of the relative scarcity of their rodent hosts, they are not commonly found. As there is practically no cross-agglutination between different strains of leptospira after the early acute phase of infection, it seems unlikely that these two reactions were false positives.

TABLE I

200 SAMPLES OF CANINE SERUM EXAMINED FOR LEPTOSPIRAL ANTIBODIES

Suspension used	Number showing agglutinins	Percentage positive	Titre of Serum					
			1 : 10	1 : 30	1 : 100	1 : 300	1 : 1,000	1 : 3,000
L. canicola	34	17·0	3	4	10	10	5	2
L. ictero.	11	5·5	0	.5	2	3	1	0
L. grippo.	0	0	0	0	0	0	0	0
L. hyos	1	0·5	0	0	0	0	0	1
L. pomona	1	0·5	0	0	0	0	1	0

Broom & Joshua (1949) published a record of a comparable investigation in this country, in which the serum of cats was tested against *L. icterohaemorrhagiae, L. canicola, L. pomona, L. grippotyphosa, L. sejroe,* and *L. bataviae.* Agglutinins in low titre for *L. icterohaemorrhagiae* were found in only two animals. Whether the fact that these cats were urban as opposed to rural would account for the negative results with the other strains of leptospira would seem to be a matter for conjecture.

In a second survey carried out by the same workers between April, 1949, and August, 1951, on the serum of 187 cats, nearly all of which were destroyed for various causes in the normal routine of practice, and reported in a personal communication, some evidence of the rare occurrence of *L. grippotyphosa* and *L. sejroe* was obtained. Agglutinins to *L. grippotyphosa* at a titre of 1:30 were found in the serum of a 13½-year-old male cat, and to *L. sejroe* at the same titre in a 12-year-old male cat. The latter animal showed some clinical signs of nephritis, and agglutinins to *L. icterohaemorrhagiae* and *L. canicola,* both at a titre of 1:100, were also found in its serum. Among the remaining 185 sera examined, 14 were positive with *L. icterohaemorrhagiae* but only one with *L. canicola.*

Summary

Canine sera were examined for agglutinins to five different strains of leptospira. A proportion agglutinated with *L. canicola* and *L. icterohaemorrhagiae* and two with *L. hyos* and *L. pomona.* The significance of the possible rare occurrence of these strains in Britain is discussed.

Acknowledgments.—I wish to thank Dr. J. C. Broom of the Wellcome Laboratories of Tropical Medicine for his invaluable advice and for supplying the strains of leptospira, and also Miss J. J. Clarke for technical assistance.

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A NOTE FROM POLAND

In contrast with the tragic state of affairs in Hungary it is pleasant to record that life for our colleagues in Poland seems to have become more tolerable. Mr. H. G. McShane has received a postcard from Dr. Kok, to whom he gave hospitality during the war, and from whom he had heard nothing since. Dr. Kok writes, "Now I am able to write to you: life is returning to normal." He was anxious to have news of his British friends.

A Note on the Incidence of Salmonella Infection in Healthy Cattle

BY

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INVESTIGATIONS into the incidence of symptomless carriers of Salmonellae among cattle have yielded widely differing results. Thus Ritchie & Clayton (1951) examined samples of faeces, bile, and liver swabs from 2,645 healthy cattle of Irish and non-Irish origin slaughtered at Birkenhead. They isolated *S. dublin* from 10 per cent. of faeces samples and 3.4 per cent. of bile samples from Irish cattle, and from 3.7 per cent. of faeces samples and 0.5 per cent. of bile samples from non-Irish cattle. Liver swabs from 12.3 per cent. of Irish cattle were positive for *S. dublin* but no Salmonellae were detected in liver swabs from non-Irish cattle. *S. typhi-murium* was isolated from the faeces of one animal only.

Murdoch & Gordon (1953) in N. Ireland examined 1,000 samples of faeces from healthy cattle and found that 8.6 per cent. of the cattle were carriers of *S. dublin. S. thompson* and *S. gallinarum* were each isolated on two occasions, and *S. enteritidis* and *S. typhi-murium* each on one occasion; *S. kentucky* and *S. oregon* were also isolated. However, Williams Smith & Buxton (1951) examined faeces from 750 healthy cattle from various sources and recovered *S. dublin* from three (0.4 per cent.). They also examined faeces samples from 430 cows exhibited at the Dairy Show, London, and the Fat Stock Show, London, and therefore drawn from a wide area, but failed to recover any Salmonellae. In addition 600 faeces samples from cattle suffering from diseases other than salmonellosis yielded only three *S. dublin* isolations (0.6 per cent.). Thus, out of 1,789 samples only six yielded *S. dublin* (0.34 per cent.). No other types of Salmonellae were recovered.

An investigation was therefore carried out at Dalkeith abattoir which was chosen for two reasons. Firstly, it received animals from an area where a widespread milk-borne outbreak of food poisoning due to *S. typhi-murium* had recently occurred and where it appeared that there might be a widespread endemic infection in both cattle and human beings (Riddell, 1954); secondly, 50 per cent. of the cattle slaughtered there were of Irish origin and fattened locally, which would enable some comparison to be made with the figures of Ritchie and Clayton.

Methods and Results

Faeces samples were taken from 369 animals, bile samples from 478 animals, and mesenteric lymph gland samples from 77 animals. Thus in all 924 animals were sampled. These samples were taken over the period January, 1954, to March, 1955.

The samples were collected and examined by the methods used by Ritchie & Clayton (1951).

From only one of the 924 samples examined was a Salmonella organism isolated. This was isolated from a bile sample and was identified as *S. typhi-murium*, an observation that was confirmed by the Public Health Laboratory Service Salmonella Reference Laboratory.

Discussion

The isolation of *S. typhi-murium* from only one out of 924 animals was in agreement with the finding of Ritchie & Clayton (1951) and suggests that although healthy carriers of *S. typhi-murium* exist, their number is small.

The negative findings in the case of *S. dublin* disagreed with the work of Ritchie & Clayton (1951) and Murdoch & Gordon (1953) and, if, as it seems from their figures, a significant percentage of Irish store cattle are symptomless carriers when imported into this country, it would appear that they are able to rid themselves of infection in the fattening period between importation and slaughter.

Although *S. dublin* has been found by various workers to be the Salmonella species most commonly isolated from cattle and appears to be endemic in some areas, other areas would seem to be almost entirely free. Savage (1956) associated food poisoning due to Salmonellae with animal reservoirs, but even where the incidence of bovine carriers of *S. dublin* was high, the number of outbreaks of food poisoning due to this organism was small (Murdoch & Gordon, 1953). In addition the low incidence of healthy bovine carriers of *S. typhi-murium* contrasts markedly with the great number of cases of food poisoning due to this organism. It would seem, therefore, that the healthy bovine Salmonella carrier animal may have little significance in the causation of food poisoning, but further work may be justified in areas where salmonellosis of cattle is endemic to see to what extent the presence of carrier animals is associated with cases of food poisoning.

Summary

The 924 samples of faeces, bile, and lymph glands from healthy cattle passing through Dalkeith abattoir were examined for Salmonellae.

S. typhi-murium was isolated from the bile of one healthy, home-bred animal. *S. dublin* was not isolated from any of the samples.

Acknowledgments.—I should like to express my thanks to Professor A. Robertson for his advice, and to Dr. F. Alexander and Mr. G. S. Ferguson for their help in preparing this report.

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Legal Pitfalls of Veterinary Practice

BY

CHARLES STEVENS

VI.—NUISANCE AND DANGEROUS STRUCTURES

NUISANCE has been defined as an unlawful interference with a person's use or enjoyment of land or of some right over or in connexion with it. The nuisance may be public, which is a common nuisance affecting the public generally and is prosecuted as a crime, or it may be a private nuisance which injures a private person or persons exclusively. It is the latter type of nuisance with which the veterinary surgeon sometimes finds himself involved.

A number of veterinary surgeons maintain boarding kennels and occasionally neighbours lay a complaint that a nuisance is being committed and threaten the veterinary surgeon with a legal action. Whether a nuisance is or is not committed is in all cases a matter of fact to be decided upon the circumstances existing and no general rule can be laid down. Any veterinary surgeon threatened with a civil action for nuisance should consult a local solicitor well acquainted with the conditions and act on his advice.

In some areas by-laws exist which prohibit a nuisance of the type made by noisy animals and in those cases the local Council on complaint from private residents may institute a prosecution in the Magistrate's Court. Here again the defence would depend on the wording of the particular by-law, and local conditions, and local legal advice should be sought.

The essence of nuisance is interference with enjoyment of property and one of the main tests is that of reasonableness. A court in considering whether a nuisance exists or not will always take into consideration whether the complaint is reasonable, and over-sensitivity by complainants will not be sufficient to justify any charge made. Frequently the fact that boarding kennels have existed in the district for a number of years without complaint and that at any time the nuisance committed is not more than that which has been common for a period is sufficient defence in itself.

The question of dangerous structures is more involved. It is a legal question which is of interest to all veterinary surgeons, and particularly those who occupy premises. Immediately there arises the question in rented property of who is liable. Primarily it is the occupier but in some cases it may be the owner. Persons coming on to land or structures may be divided into four classes:—

1. Those under contract.
2. Invitees.
3. Licensees.
4. Trespassers.

An example of a person entering under contract is a guest staying at an hotel and paying for accommodation. Here a high degree of care is owed by the occupier of the premises to the person entering under contract.

An invitee at law is a person entering premises on business common to both, *e.g.*, a client coming into a veterinary surgeon's surgery or bringing his animal to his yard. The occupier in such cases is liable for any damage resulting from defects in the structure of which he should be aware whether he is or is not. If a waiting room or surgery ceiling is liable to drop or flake off, damaging clothes, this is something of which the veterinary surgeon should be aware, even if not so, and if damage results the occupier must pay. A client who tears her nylon stockings on the sharp edge of a chair or piece of furniture has a very good claim for damages, because here again the veterinary surgeon should guard against such things. There have been many successful cases brought against occupiers arising out of floors too highly polished.

A licensee at law is a person who has a bare permission to go on to land or structures, and in this instance the occupier has a duty to warn the licensee only of concealed dangers of which the occupier is actually aware. An example of a veterinary surgeon and a licensee would be where there is a surgery or house premises with a forecourt adjoining a pavement across which the public is allowed to walk freely. If somebody is walking on the forecourt and a cellar flap were lifted suddenly or a yard gate opened without warning and a vehicle comes out causing damage, the veterinary surgeon is liable because this is a concealed danger of which the occupier knows and adequate warning and protection should have been given to the licensee. It would be different in a case where there was a lamp bracket outside the premises which had become rusted through and fell damaging the licensee. This is a concealed trap of which the occupier is not aware and there is no liability to the licensee although there would be to an invitee, for example a client making his way towards the surgery.

Last in the scale of those coming on to land and structures is the trespasser. Children excepted, the trespasser has practically no rights at law and little duty is owed to him by the occupier, except that the latter may not set spring guns or traps (there are certain exceptions at night time in enclosed premises). Normally the occupier of property is under no extra liability to children, but he does have a duty to avoid the dangers of attractive traps. Certain dangers which would be apparent to adults may provide an attraction for young children and these should be avoided or liability will be incurred.

CONFERENCE ON ANIMAL FEEDING-STUFFS

The full proceedings of the B.V.A. Conference on Supplements and Additives in Animal Feeding-stuffs, held in London last November, will be published as a special issue of THE VETERINARY RECORD on February 23rd. Sufficient extra copies will be printed to meet orders from the feeding-stuffs trade.

Current Literature

BOOK REVIEWS

The Physiology and Biochemistry of Lactation. FOLLEY, J. S. (1956). Oliver & Boyd. pp. 153. Price 18s. 6d.

This is an English version of a French publication, "Recherches Récentes sur la Physiologie et la Biochemie de la Sécrétion Lactée," which consisted of a series of lectures given at the Collège de France by Dr. Folley in December, 1953. The English text has been brought up to date by brief references to work published since 1953.

There is no need to introduce the writer, for probably no one has contributed more to our knowledge of the physiology and biochemistry of lactation over the past 20 years than has Dr. Folley, assisted by numerous colleagues who have been attracted to the department he has built up at the National Institute for Research in Dairying at Shinfield, near Reading.

The book consists of six chapters, dealing respectively with the development of the mammary gland, lactogenesis, galactopoiesis, suckling and milking, biosynthesis of milk fat, and biosynthesis of lactose and milk protein. Each chapter includes a valuable list of references to published work and the text is illustrated by graphs and plates. The plates which illustrate the histological structure of the mammary gland are very instructive and the ones taken from Richardson's paper showing the distribution of the myoepithelial cells are particularly fine. A reproduction of Tintoretto's "The Origin of the Milky Way," which hangs in the National Gallery and shows milk being forcibly ejected from both of Juno's breasts when Jupiter plucked the infant Hercules from her, is included to show that the response to suckling is systemic and not confined to the breast being suckled!

This is an excellent book, clearly written and easily read. Veterinary students, research workers, and teachers must certainly read this little book, practitioners will find it interesting as well as instructive, and there will also be a much wider reading public, outside the veterinary profession, since the subject matter summarises much of the recent work on general lactational physiology and biochemistry.

Minerals in Pasture: Deficiencies and Excesses in Relation to Animal Health. Second Edition. (170 pp, 56 tables.) By F. C. RUSSELL & DOROTHY L. DUNCAN. Commonwealth Agricultural Bureau, Slough. (1956). 25s.

This is a revision of the 92-page review which first appeared* during the war-time stresses and shortages of 1944, but, on account of the crowded format of the original, the present increase in subject matter is less than might be thought from a comparison of the numbers of pages in the respective editions. Nevertheless, the work of the last 12 years has led to a 50 per cent. increase in the amount of information supplied.

The stiff boards of the present edition promise a pleasant freedom from the dog-eared tattiness to which

* Reviewed *Vet. Rec.* (1944). **56.** 478.

regular use of the first one gave rise. On the other hand, not only increased length but also the lamentable rise in the costs of book production have involved a five-fold change of price. The type and paper are now both of good standard.

In an introductory note, Dr. Duncan says that some chapters have been entirely re-written, whereas nothing more than a few paragraphs have been added to others. And truly the table of Contents of the second edition has much similarity to that of the first. Thus Chapters I and II still deal with simple cobalt and cobalt-and-copper deficiencies, respectively. By contrast, not simply copper deficiency alone, but also the complications introduced by the presence of molybdenum, inorganic sulphate and manganese, are then treated, whilst Chapter IV (new) describes the effects of excess dietary copper, there following a general discussion of copper deficiency and excess in Chapter V (also new).

As in 1944 the present volume then calls attention to sodium, potassium and chlorine, but for some unknown reason, however, direct or indirect reference to magnesium is now missing from the list of Contents, allusion to such subject matter appearing with the alkali metals.

Iodine deficiency and selenium excess still command separate chapters, but the effects of excess fluorine, arsenic or nitrate are now grouped together. As before, calcium or phosphorus deficiency is dealt with in a single section, whilst the volume concludes once more with a very brief general discussion.

On this occasion it has been possible to submit portions of the text to specialists in different parts of the world and thus to obtain advice which adds much to the value of the monograph. There are, moreover, some 600 references to the literature, many of them for the period 1944–55, whilst Dr. H. Greene (not to be confused with Dr. H. H. Green) has contributed an interesting foreword dealing largely with soil-plant-animal inter-relationships.

Of the general worth of this monograph and of the need of all those who work with the grazing animal to possess a copy, there can be no doubt, but one has a right to expect a higher standard of attainment from this type of book than from an average text-book and, in the opinion of the reviewer, there are imperfections in the second edition which should be corrected in the third.

Firstly, the two elements, cobalt and copper, now account for nearly 80 per cent. of the text, against a previous 60 per cent. Even when one takes notice of the large amount of work devoted to those elements since 1944, there seems to be a lack of proportions in the allocation of space. One wonders whether the specialists consulted have produced an embarrassment of wealth. The suggestion of a lack of balance is supported by the two meagre pages, devoted to calcium and phosphorus, to which is appended a bibliography of seven references, of which only one is new, and even that is 10 years old ! It is true that a separate publication devoted to calcium and phosphorus is promised, but in that case, why not omit this section completely, or at least provide an up-to-date summary of the field ? This book is now, in fact, largely an account of certain trace elements in pasture and it might well have had a change of title, with sodium, potassium and chlorine (17 pp.) being moved, like calcium and phosphorus, into a new volume.

Most inexcusable of all is the continued lack of author and subject indices. Their omission from a war-time publication may be forgiven but there seems to be no reason why the lack should go on indefinitely. Can one imagine a monograph emerging from the U.S.A. in this embryonic form ? It is true that the table of Contents gives a long list of " specific " diseases, but their names are largely trivial and simply enable a clinician, who knows he is dealing, for example, with " swayback," to " read all about it." The veterinary surgeon, trying to obtain insight of some problem, new to him, will not have his way smoothed by the lack of a good index, despite the useful " Summary Table of Main Investigations " provided. And who would guess that references to bovine infertility occur, for example, on pages 96, 108, 117, etc. ? Again, so far as authors are concerned, who would expect to find reference to Hignett's views on infertility, not in the section on phosphorus, but in the general discussion at the end of the monograph ? Good, generous indices would add a few shillings to the cost of the book but would treble its value.

Finally, though the volume is a mine of facts, one striking contrast between it and certain FAO, or National Research Council (U.S.A.) publications of a similar class, is its lack of photographs : it is not because they are unobtainable. The publishers may have been dissuaded from illustrating the text because of the cost, but a monograph of this kind should be authoritative and comprehensive : it can only expect a wide sale if it is. And, paradoxically, a wide sale will help much to keep down the price. The Commonwealth, with major contributions from Australia, Britain, New Zealand and South Africa, has a first-class record of achievement in the field of mineral metabolism : it could, and undoubtedly would, support a publication which could bear comparison with monographs from any other part of the world.

ABSTRACT

Thiamine Deficiency Encephalopathy in Cats. JUBB, K. V., SAUNDERS, L. Z., & COATES, HELEN V. (1956). *J. comp. Path.* **66.** 217–227.

This article is an American report of a nervous disease of cats that were fed on a diet of canned commercial food containing whole fish ; the clinical signs and the lesions in the C.N.S. were similar to those found in Chastek paralysis in foxes. Ten naturally occurring cases of the condition in cats were examined and in addition the disease was produced experimentally in four cats fed the same commercial food. A thiamine-deficient diet fed to two other cats resulted in similar neurological and pathological abnormalities : intraperitoneal injection of 1 mg. crystalline thiamine hydrochloride resulted in rapid improvement.

The manifestations exhibited by the affected cats were : anorexia, ataxia, ventroflexion of the head, convulsions, spasticity loss of optic and labyrinthine righting reflexes, dilatation of the retinal vessels and sometimes retinal haemorrhages.

Specific lesions were confined to the C.N.S. and consisted of bilaterally symmetrical haemorrhages, of variable extent, into the periventricular grey matter. Dilatation of the vessels, oedema, vascular hypertrophy, intense gliosis and reaction by fat granule cells were also found. A. C. P.

News and Comment

THE P.D.S.A. BILL

In our last issue, brief mention was made of a new P.D.S.A. Bill. This, in effect, seeks to establish a different procedure in dealing with applications for the granting of licences under Section 7 of the Veterinary Surgeons' Act, 1948. The B.V.A. has lodged a petition against the Bill, and in the event of its reaching the Committee stage it will be opposed. The Royal College is petitioning against the Bill, and will also oppose it in Committee if necessary.

The Officers of the B.V.A. and the Chairman of the Parliamentary and Public Relations Committee have acted swiftly and the situation is under close attention. As the subject is, in a sense, *sub judice*, editorial comment is being withheld for the present.

PETROL RATIONING: NORTH WALES

Now that the B.V.A. liaison officers have had some experience of working with Regional Petroleum Officers, it becomes clear that Wales is a large area for one liaison officer to cover.

It has therefore been arranged that Mr. C. M. Edwards, honorary secretary of the North Wales Division (address: Veterinary Laboratory, Bryn Adda, Penrhos Road, Bangor, Caerns.) will act as sub-liaison officer, working with Mr. D. G. Morgan, the B.V.A. liaison officer for Wales. North Wales members should contact Mr. Edwards in the first place, so that he can support their appeals from his own local knowledge, before referring them to Mr. Morgan to be taken up with the R.P.O.

As a general rule, B.V.A. liaison officers (and also in this case, the sub-liaison officer) should be called upon for help only when an initial application for supplementary petrol has not been fully met and further appeal direct to the R.P.O. by the veterinary surgeon concerned has been refused.

VETERINARY SURGEONS FROM HUNGARY AND EGYPT

There are at present in this country refugee veterinary surgeons from Hungary, and also British members of the profession driven out of Egypt. A proportion have obtained employment, while others are urgently seeking it. All are in need of friends, of those who will make them welcome, perhaps invite them to visit their homes, and in other ways provide that personal help and sympathy which often mean as much, or more, than material aid. It does not require an effort of imagination to enter into the feelings of colleagues who have lost, or been deprived of, everything they possess; driven from their homes, and left abandoned, except for State help, in an unfamiliar country.

The addresses of a number of Hungarian veterinary surgeons, and of Britons lately working in Egypt, are known at the headquarters of the Association, and it is hoped to form a panel of the names of members of the profession willing to befriend them. May we therefore commend this matter to our readers' urgent attention? Please write to the General Secretary and say what kind of help you feel able to offer: a personal visit, an invitation to your home, employment either temporary or permanent, and so on. These are our colleagues, and it is both a duty and a privilege to try to help them.

The Association as such will do whatever is practicable by inviting the refugees to headquarters for hospitality and the discussion of their problems; but the personal touch is needed also and will, we feel certain, be deeply appreciated.

THE R.C.V.S. DISCIPLINARY COMMITTEE

The name of Mr. Kenneth Richard Malgarin, of 6, Fairmount Road, Bexhill-on-Sea, Sussex, has been removed from the Supplementary Veterinary Register on January 25th, 1957, by direction of the Disciplinary Committee, as constituted under the Veterinary Surgeons Act, 1948, he having been found guilty of conduct disgraceful in a professional respect on the following charge:—

"That he was on May 10th, 1956, convicted at West Sussex of larceny of a motor car to the value of £609 1s. 5d. He pleaded guilty to the charge and was sentenced to four months' imprisonment. He appealed against this decision. His appeal was dismissed and the sentence was increased to six months' imprisonment. And that thereby he has been guilty of conduct disgraceful to him in a professional respect."

THE REGISTER OF VETERINARY SURGEONS

Restorations

Under Section 25 (4) of the Veterinary Surgeons Act, 1948, and the provisions of Statutory Instrument 1150 of 1953, the names of the under-mentioned were restored to the Register of Veterinary Surgeons on the dates indicated:—

Andrewes, Francis Nesfield; Lynton Grange, Fortis Green, London N.2. (January 3rd, 1957.)

Lawson, R. Mackay; Markyle, Whitley Wood Road, Reading, Berks. (January 28th, 1957.)

Turnbull, John Edwin; 31, Porth y Castel, Barry, Glamorgan. (January 15th, 1957.)

NEW MEMBERS OF THE R.C.V.S.

The under-mentioned gentlemen were admitted to membership of the Royal College on the dates shown against their names:—

Al-Hammawi, Mahmood Hussein, Khatooniah Quarter, Mosul, Iraq. January 18th, 1957, Bristol. B.V.SC. (BRIS.); Kemp, Charles, 11, Milton Avenue, Cambuslang, Glasgow. January 12th, 1957, Glasgow. B.V.M.S. (GLAS.); Marshall, Malcolm, 46, North Elgin Street, Clydebank, Glasgow. January 12th, 1957, Glasgow. B.V.M.S. (GLAS.); Mason, Roger Stanley, Lower Hayne, Corfe, Taunton, Somerset. January 18th, 1957, Bristol. B.V.SC. (BRIS.); Ryland, David

Nicholas, 71, Cowbridge Road East, Cardiff, Glamorgan. January 18th, 1957, Bristol. B.V.SC. (BRIS.); Smith, Lawrance Blair, 2, Park Terrace, Glasgow, C.3. January 12th, 1957, Glasgow. B.V.M.S. (GLAS.); Thomas, Edward Henry, 61, Melvill Road, Falmouth, Cornwall. January 18th, 1957. B.V.SC. (BRIS.).

Commonwealth and Colonial List

Friedman, Spencer Brian, B.V.SC. (PRETORIA); c/o South Africa House, Trafalgar Square, W.C.2.

Bakker, Sybe Kornelis, B.V.SC. (PRETORIA); c/o 9, Ovington Square, London, S.W.3.

IN PARLIAMENT

Live Cattle (Export to Continent)

MR. HURD (January 24th) asked the Minister of Agriculture, Fisheries and Food if, in view of the continuing public anxiety about the treatment of live cattle shipped from this country for slaughter on the Continent, he will now arrange for an inquiry to establish the facts; and if he will consider the desirability of requiring that these butchers' cattle should be slaughtered here and the carcase meat exported.

LIEUT.-COL. BROMLEY-DAVENPORT asked the Minister of Agriculture, Fisheries and Food whether he is continuing to watch the export of live cattle to the Continent; whether he is aware that public anxiety over this matter has not abated in spite of efforts to enforce the regulations; and why it is necessary for these live cattle to be exported for slaughter rather than their dead carcases.

MR. EDWARD EVANS asked the Minister of Agriculture, Fisheries and Food if he is aware of the public anxiety at the conditions under which old dairy cattle are exported, live, to the Continent; and whether he is satisfied that the accommodation and treatment of these animals on the voyage is satisfactory judged by reasonable humane standards.

MR. GODBER: My right hon. Friend is at present considering the advisability of an inquiry such as my hon. Friend the Member for Newbury (Mr. Hurd) suggests into the export of live cattle for slaughter on the Continent. The desirability of requiring slaughter before export is clearly one that would have to be investigated in any such inquiry. In the meantime, my right hon. Friend is proposing to consult the interests concerned about the feasibility of strengthening the present transit regulations.

AGRICULTURAL SCHOLARSHIPS

The Ministry of Agriculture is offering a limited number of scholarships for courses in an agricultural or allied subject, including veterinary science, at university departments of agriculture, agricultural colleges, and farm institutes.

The scholarships are open to the sons and daughters of agricultural workmen or of working bailiffs, smallholders, and other rural workers.

Details of the awards are as follows:—

Twenty Senior Scholarships for degree or diploma courses in an agricultural subject (degree courses at university departments of agriculture, diploma courses at the agricultural colleges, and the Essex and Lancashire Institutes of Agriculture), or for courses in veterinary science at veterinary colleges.

Thirty Junior Scholarships tenable at farm institutes for courses not exceeding one year in duration, in agriculture, horticulture, dairying or poultry husbandry, and

Six Extended Junior Scholarships for those who have already held junior scholarships.

PERSONAL

Births

BENSON.—On January 6th, 1957, to Heather (M.B., CH.B.), wife of J. A. Benson, B.V.SC., M.R.C.V.S., of 28, Boroughgate, Appleby, Westmorland, a daughter, Elizabeth Jill.

BOX.—On January 22nd, 1957, to Paula, wife of Philip Box, M.R.C.V.S., of The Chestnuts, Nowton Road, Bury St. Edmunds, a son, Nigel Russel.

CULLEN.—On December 21st, 1956, to Jenny, wife of Jack Cullen, M.R.C.V.S., of "Greenacres," Borrowby Avenue, Northallerton, Yorkshire, a daughter, Gillian Carol.

MCCULLY.—On January 17th, 1957, to Gretta, wife of William Hayes McCully, M.R.C.V.S., of Churchtown, Cookstown, Northern Ireland, a daughter.

MANTON.—On January 26th, 1957, to Helen, wife of V. J. A. Manton, M.R.C.V.S., 37, Hicks Lane, Girton, Cambridge, a daughter, Frances Anne Margaret.

PARKINSON.—On January 25th, 1957, to Jean, wife of K. D. Parkinson, M.R.C.V.S., 59, Abbey Road, Waltham Cross, Herts, a son, John, brother to Stephen.

Marriage

STANHOPE—SIDDORN.—On Saturday, January 19th, 1957, at St. Thomas' Church, Eaton, Tarporley, Cheshire, Donald Thomas Stanhope, M.R.C.V.S., elder son of Mr. and Mrs. Thomas Stanhope of Gorsey Moor, Eaton, Congleton, Cheshire, to Ursula Mary Siddorn, elder daughter of Mr. and Mrs. Fred. Siddorn of the "Red Lion," Eaton, Tarporley, Cheshire. H. K. Melluish, M.R.C.V.S., was the best man.

COMING EVENTS

February

6th (Wed.). General Meeting of the Ayrshire Veterinary Association in the Hotel Dalblair, Ayr, 2.30 p.m.

7th (Thurs.). General Meeting of the Central Veterinary Society at the Royal Veterinary College, Camden Town, London, N.W.1, 6 p.m.

13th (Wed.). General Meeting of the Society of Practising Veterinary Surgeons at the Royal Veterinary College, Camden Town, N.W.1, 2.30 p.m.

15th (Fri.). Annual General Meeting of the Royal Counties Veterinary Association at the Caversham Bridge Hotel, Reading, 2.15 p.m.

19th (Tues.). 81st Annual General Meeting of the Eastern Counties Veterinary Society at the Bell Hotel, Norwich, 11.15 a.m.

21st (Thurs.). Annual Ball of the Royal (Dick) School of Veterinary Studies in the Assembly Rooms, George Street, Edinburgh, 8.30 p.m.

22nd (Fri.). Annual Ball of the Liverpool University Veterinary Society in the Students' Union, 8 p.m.

March

2nd (Sat.). Meeting of the Scottish Regional Group of the A.V.T. & R.Ws. at the University of Glasgow Veterinary Hospital, 10.15 a.m.

30th (Sat.). Annual Convention of the Ceylon Veterinary Association in the Queen's Hotel, Kandy, Ceylon.

FOOT-AND-MOUTH DISEASE

The areas described in the schedules below will cease to be Infected Areas for the purpose of preventing the spread of foot-and-mouth disease on February 5th, 1957:—

So much of the City and County Borough of Norwich as comprises that part of the bed of the River Yare which lies to the east of the parish of Brundall.

IN THE COUNTY OF NORFOLK

In the Petty Sessional Division of Loddon and Clavering: The parishes of Surlingham, Rockland St. Mary, Bramerton, Holverston, Yelverton, Aldeby, Wheatacre, Burgh St. Peter, Claxton, Hellington, Alpington, Bergh Apton, Ashby St. Mary, Carleton St. Peter, Langley with Hardley, Thurton, Chedgrave, Brooke, Kirstead, Seething, Sisland, Mundham, Loddon, Heckingham, Norton Subcourse, Thurlton, Haddiscoe, Raveningham, Toft Monks, Hales, Gillingham, Stockton, Kirby Cane, Geldeston, Ellingham, Broome, Thwaite, Ditchingham, Hedenham, and Woodton.

In the Petty Sessional Division of Blofield and Walsham: The parishes of Cantley, Strumpshaw and Freethorpe and so much of the parish of Reedham as lies to the south of the main road (A47) running from Great Yarmouth to Norwich excluding the said road.

IN THE COUNTY OF KENT

The Borough of Dover.

In the Petty Sessional Division of Wingham and Sandwich. The parishes of Eastry, Goodnestone, Adisham, Aylesham, Nonington, Kingston, Barham, Womenswold, Eythorne, Tilmanstone, Sutton, Sibertswold, Coldred, Denton, Wootton, Lydden, Temple Ewell, Whitfield, West Langdon, East Langdon, Guston, River, Swingfield, Alkham, Capel le Ferne and Hougham Without.

In the Petty Sessional Division of Hythe and Romney Marsh: The parishes of Elham, Acrise and Hawkinge.

The area described in the schedule below is declared to be an Infected Area for the purpose of preventing the spread of foot-and-mouth disease:—

IN THE COUNTY OF SOUTHAMPTON (HAMPSHIRE)

The City of Winchester.

The Boroughs of Andover and Basingstoke.

In the Petty Sessional Division of Kingsclere: The parishes of Overton, Laverstoke, Whitchurch and Litchfield and Woodcott and so much of the parishes of Ecchinswell and Sydmonton and Kingsclere as lies to the south of the road running from Burghclere *via* Sydmonton and Kingsclere to Basingstoke excluding the said road.

In the Petty Sessional Division of Basingstoke: The parishes of Oakley, Deane, Steventon, North Waltham, Popham, Dummer with Kempshot, Woodmancott, Nutley, Preston Candover, Ellisfield, Farleigh Wallop, Cliddesden and Bradley and so much of the parish of Wootton St. Lawrence as lies to the south of the main road (A339) running from Kinsclere to Basingstoke excluding the said road.

In the Petty Sessional Division of Alton: The parishes of Wield, Medstead and Bentworth.

In the Petty Sessional Division of Alresford: The parishes of Candovers, Northington, Old Alresford, Bighton, Itchen Stoke and Ovington, New Alresford, Bishop's Sutton, Ropley, Bramdean, Cheriton, Tichborne, Beauworth and Kilmeston.

In the Petty Sessional Division of Winchester: The parishes of Micheldever, Little Somborne, Wonston, Itchen Valley, Kings Worthy, Headbourne Worthy, Littleton, Crawley, Sparsholt, Ashley, Hursley, Compton, Twyford, Abbotts Barton and Chilcomb and so much of the parish of Owslebury as lies to the north and east of the road running from Twyford *via* Morestead to Corhampton including the said road and so much of the parish of Kings Somborne as lies within the petty sessional division.

In the Petty Sessional Division of Andover: The parishes of St. Mary Bourne, Smannell, Hurstbourne Priors, Longparish, Bullington, Barton Stacey, Chilbolton, Leckford and Stockbridge and so much of the parishes of Upper Clatford, Goodworth Clatford, Wherwell and Longstock as lies to the east of the road running from Andover *via* Balksbury Camp, Upper Clatford, Goodworth Clatford and Longstock to Houghton including the said road.

ADDRESSES OF DISEASE INFECTED PREMISES

The list given below indicates, first the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Anthrax

Aberdeen. East Cannahars, Whitecairns (Jan. 23).

Ches. Brownlow Farm, Astbury, Congleton (Jan. 18).

Cumberland. Elm House, High Hesket (Jan. 21).

Devon. Whiddon Farm, Abbotskerswell, Newton Abbot (Jan. 22).

Fife. Bankhead Farm, Aberdour (Jan. 22).

Kent. Preston Marsh, Forstal, Preston, Canterbury (Jan. 18).

Renfrew. Parkhill Farm, Port Glasgow (Jan. 22).

Sussex. Habens Farm, Rogate (Jan. 22).

Fowl Pest

Essex. Gravel Hills, Howe Green, Sandon, Chelmsford; Heath Cottage, Langham Road, Boxted; The Bays, S. Bergholt Road, West Bergholt, Colchester (Jan. 22); Edenhurst, Sandon; Glenrose, Lexden, West Bergholt, Colchester (Jan. 23); 92, Lodge Lane, Collier Row, Romford (Jan. 24).

Lancs. Bannisters Farm, Liverpool Old Road, Much Hoole (Jan. 20); Homer House, Liverpool Road, Bretherton; Turnover Hall, St. Michaels, Preston; Raikes Hall Farm, Great Eccleston (Jan. 21); Woodruff Farm, Higher Wheelton, Chorley; Lower Compley Farm, Blackpool Old Road, Poulton-le-Fylde, Blackpool (Jan. 22); Barkers Farm, Much Hoole, Preston; Singletons Farm, Eaves, Woodplumpton; Harrison Hill Farm, Green Lane, Barton; 53, High Park Road, Southport; Jollys Farm, Much Hoole (Jan. 23).

Salop. 36, Standford Bridge, Newport (Jan. 22).

Yorks. Heaton House Borough Bridge (Jan. 22).

Swine Fever

Berks. Grange Farm, Long Lane, Shaw-cum-Donnington, Newbury (Jan. 22).

Derby. The Bungalow, Bridle Lane, Stanton-by-Newhall, Burton-on-Trent (Jan. 21); Bowshaw Farm, Dronfield (Jan. 23).

Northants. Hinton House, Woodford Halse (Jan. 23).

Oxford. The Poultry Farm, Middle Barton (Jan. 21).
Staffs. Piggeries, Golden Meadows, St. Chads Road; Blackbrook Farm, Weeford, Lichfield (Jan. 21); Bromley Lane Farm, Handsacre, Rugeley (Jan. 23).
Surrey. Guildford Park Farm, Guildford (Jan. 21); Vaglefield Farm, Glaziers Lane, Normandy, Guildford (Jan. 22).
Sussex. Northend Farm, Milland, Liphook (Jan. 21).

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

Petrol Rationing

Sir,—In response to Mr. J. E. Johnson's letter on the subject of petrol economy, I added a rubber-stamp overprint to all receipts sent out from this practice on January 1st, requesting clients, when possible, to phone by 9 a.m. This has been followed by a very gratifying increase in the number of calls coming in early, leaving urgent calls, in the main, to be dealt with later in the day. Whether this state of affairs will last remains to be seen.

I will gladly match Mr. Johnson's contribution to the V.V.B.F. and trust that nine other practices have sent out notices like my own.

Yours faithfully,
H. FROST.

Highfield,
Eastgate,
Sleaford,
Lincolnshire.

January 26th, 1957.

Sir,—I enclose a circular which was sent to all clients in this agricultural practice, early this month. Mr. J. E. Johnson, in his letter of January 26th, 1957, raises several good points; but I find it very difficult to economise greatly in petrol consumption. Calving cases, "milk fevers," etc., are liable to occur at any time of day or night.

Yours faithfully,
R. A. ANDERSON.

London Road,
Harleston,
Norfolk.

January 26th, 1957.

Sir,—We feel that some comment is demanded by Mr. Johnson's letter in your issue, January 26th, 1957.

Whilst giving what we consider to be a most adequate emergency service, no assistant has ever been, or will ever be, required to visit a cat with moist eczema at 10.30 p.m. The policy of seeing any animal at *any* time, except in emergency, is unnecessary, and in our opinion could indicate poor client management. Surely in any efficiently run practice this type of visit would be impossible on account of economy alone?

On January 1st, all our clients received a circular with their accounts requesting early notice of visits required. In an agricultural practice it is impossible to obtain more than a nominal reduction in fuel consumption without reducing essential services. In practices less lucrative than that of Mr. Johnson, the price of petrol has for some time constituted a major consideration necessitating economical use even in pre-Suez days.

We trust that the contents of this letter will encourage Mr. Johnson to make a donation of at least 10 per cent. of his £3 3s. to the V.V.B.F.

Yours faithfully,
K. E. BROWN,
B. J. McCARTHY.

The Vineyard,
Abingdon,
Berks.

January 26th, 1957.

Sir,—I was interested and amazed to read the letter on this subject in your issue of January 26th, from Mr. Johnson.

It is obvious that the economic side of his practice must be infinitely better managed than my own, if, as he states, he hardly ever considers the economic use of petrol in his practice. I, too, was glad that the President of the Royal College had seen fit to speak to the profession at a time of national crisis. I felt it was a desirable gesture, but I did not know what I could do in practical support. Mileage costs have been extremely high for many years. In addition, wasteful mileage means wasteful time and, for that reason, I have never retracted the wartime request to be called in good time in the morning. All steps possible are taken to cover as much work in a given mileage as is possible. Lists of calls are always left in the surgery so that contact can be made to deal with others in the same direction. These things I find to be matters of mere economic necessity. On the other hand, many clients who are normally willing to bring small animals into the surgery, will request a visit because of their own lack of petrol.

Is a 10.30 p.m. visit to a case, which is in no sense urgent, a matter for pride on the type of service given? I think this is very much open to question. I think it is certain that Mr. Johnson will be called upon to subscribe £3 3s. to the V.V.B.F. It is possible that the saving in petrol, which I am sure he will be able to effect in his practice, may make it possible for this subscription to be increased.

Yours faithfully,
L. GUY ANDERSON.

49, Cambridge Street,
Aylesbury,
Bucks.

January 28th, 1957.

Sir,—In the hope of helping the V.V.B.F. (through the generosity of Mr. J. E. Johnson), I am enclosing a circular which was sent to all our clients at the start of petrol rationing.

Yours faithfully,
F. V. JOHN.

Penybryn,
Llandilo,
Carms.

January 27th, 1957.

The Incidence of *Cysticercus bovis* in Persia

Sir,—When I visited Persia in the winter of 1955, one of the most interesting problems was the reason for the marked variation in the incidence of *Cysticercus bovis* in cattle from different parts of the country. In the dry, arid area lying south of Teheran, the capital of Persia, the incidence was low, whereas in the well-watered and semi-tropical belt lying north of Teheran and situated between the Elburz Mountains and the Caspian Sea, the incidence of beef measles was significantly greater, in some cases as high as 50 per cent. An even more interesting point was that veterinarians engaged on meat inspection in slaughter-houses in parts of the Caspian area stated that during the last few years the incidence of the affection had fallen markedly; in one particular slaughter-house it had fallen from 40 per cent. to as low as 2 per cent., and the suggestion was put to me at the time that the regular dosing of cattle now being carried out with hexachlorethane or phenothiazine might be responsible for this surprising fall. I remember jotting down this suggestion in my notebook at the time and making the pencilled comment: "It is difficult to accept this contention and some other reason must be sought." Now I am not quite so sure. To-day I have received a copy of one of F.A.O.'s publications entitled "Recent developments affecting Live-stock Production in the Americas," and in it appears the statement that in the United States "There are already some indications that the oral administration of phenothiazine, the medicament commonly used in the control of some gastro-intestinal parasites, may also have some value in reducing the intensity and incidence of ox-warble infestation." I am wondering whether there might not be some truth in the Persian suggestion after all.

Yours faithfully,
H. THORNTON.

Veterinary Department,
Newcastle upon Tyne, 1.

January 24th, 1957.

Professional Salaries

Sir,—Recent correspondence in the press about the financial remuneration of our colleagues in the medical profession prompts one to consider the position with regard to our own profession.

A study of the situations vacant columns of a prominent national daily newspaper cannot fail to produce profound disquiet. In practically adjoining columns we find an advertisement for veterinary surgeons at a salary of £650, and another advertisement for an advertising manager to a firm marketing dog and cat foods, for which the remuneration is £2,250 together with a pension, life assurance, and other emoluments. Whether we like it or not, the status of a profession in the eyes of the public is profoundly affected by the salaries it can command; if this disparity is allowed to continue we shall have great difficulty in attracting the right type of person to a career in veterinary surgery in the future.

Yours faithfully,
R. H. F. PALMER.

Greystones,
Cainscross Road,
Stroud,
Glos.

January 23rd, 1957.

Louping-ill in Mid-Wales

Sir,—It was not until 1951 that real evidence of the existence of louping-ill in Welsh sheep was obtained, when Rowlands, in a report to the Annual Conference of Veterinary Investigation Officers, recorded the presence of circulating antibodies in ewes whose lambs had died from a condition resembling this disease. In 1952 the presence of louping-ill was confirmed in the sheep population of the Principality when one of us (L. E. H.) demonstrated the presence of the virus in the brain of a lamb showing typical symptoms of the disease. This animal was one of several lambs which had died in a flock on a marginal farm within five miles of Aberystwyth, with no history of similar losses in the past. Two outbreaks of louping-ill were encountered in 1954—one on a small farm on the Plynlimon ranges and another on a hill farm in the Dovey Valley. The outbreak in the Dovey Valley is particularly interesting as the disease was discovered in a flock of sheep which had recently been acquired by a hill farmer whose original flock was in every respect, including general management, superior to his recent purchase. In spite of the fact that these two flocks shared an open mountain, no spread occurred during the grazing season. Although we have no information on the point, it is likely that louping-ill had been present in the new flock for some time before it was discovered; it would appear that efficient management had prevented the spread of the disease.

During the spring of 1956, louping ill was diagnosed on three more flocks in the Dovey Valley, all sharing a common grazing. In these outbreaks the diagnosis of the disease was based upon the clinical findings and the demonstration of circulating antibodies against louping-ill virus. Although the disease does not appear to be a severe cause of loss it is felt that it is more common than is realised and is a potential cause of nervous symptoms in lambs on hill and marginal flocks in mid-Wales.

The help of Mr. D. R. Wilson, who confirmed the presence of the virus in the brain of the lamb examined in 1952, and of other workers at the Moredun Institute who examined the blood samples is gratefully acknowledged. Finally, we are grateful

to Messrs. W. Morris Jones and J. Russell Evans who brought the early cases to our notice, and to Mr. F. B. Edwards who drew our attention to the outbreaks of the disease encountered in 1956.

Yours faithfully,

L. E. HUGHES,
G. F. KERSHAW.

Veterinary Investigation Centre,
Dairy Buildings,
Llanbadarn Road,
Aberystwyth.

January 23rd, 1957.

Decomposition of Pathological Specimens

Sir,—It frequently happens that pathological material sent to a laboratory is found on arrival to be unfit for examination due to decomposition. This decomposition may vary in form and degree, but in nearly all cases results in disappointment and dissatisfaction for the veterinary surgeon who submitted the material and for his clients. Some recent instances of this occurrence have led us to investigate its causes.

It must, of course, be realised that for optimum results from laboratory tests, material should be examined as fresh as possible. This condition applies not only to samples for bacteriological, biochemical, and haematological testing, but also to carcases and tissues for histological study. The fact that a sample is not fresh does not, however, necessarily rule out a result of any practical value, because some bacteria survive for a considerable time and chemical changes are slow in some cases. In general, however, the value of an examination decreases in direct proportion to the deterioration of the sample.

It is sometimes argued that, as so much valuable work can be done on old material in forensic medicine, why should decomposition interfere so greatly with the examination of animal carcases. But such comparisons are not valid because in most cases veterinary pathologists are more concerned with the isolation of bacteria and viruses and detection of the microscopic cellular changes associated with them than with chemical analysis and macroscopic changes. It is, therefore, very important that samples should be transported as quickly as possible after collection, and that tissues for histological examination, particularly brain tissue, should be put into 10 per cent. formol saline as soon as possible after removal from the body. The neck of the container should be wide enough to allow the specimen not only to be inserted, but also removed without damage after hardening. Helpful information on the sampling of pathological material is given in Laboratory Aids to Clinical Diagnosis Publication No. 21, published by the B.V.A.

It is in the case of whole carcases, however, that most of the difficulty due to decomposition is experienced. Many carcases are sent to laboratories by rail or through the postal services, and it is obvious that the extent of decomposition is likely to vary according to the length of the journey and the temperature at which the package is held. Nevertheless, in quite a number of cases decomposition is found to be much greater than would normally be expected, and carcases dispatched on a relatively short journey, in cold weather, reach the laboratory completely blown or discharging fluid material from the orifices. We have investigated some of these cases, and nearly always find that several organisms can be isolated. These are *Bacterium coli*, sporebearers of the Bacillus group, particularly *Bacillus anthracoides*, and in a few cases *Proteus vulgaris*. The type of these organisms, combined with the prevailing circumstances of each case, has led us to suggest several ways in which this unexpected decomposition may occur.

1. The body has been packed up while still warm. This is particularly important in the case of a fat dog, because the fat layer tends to retain heat inside the body cavity, and leads to rapid decomposition of the organs with consequent spread of common hardy intestinal bacteria such as *Bact. coli* and *P. vulgaris*. It is therefore advisable to delay a little before packing a carcase.

2. The dog has been in contact with straw, either before death or after when it was used as packing. Straw is often heavily contaminated with spores of the Bacillus group of bacteria and in certain circumstances might account for the occurrence of these organisms, especially in those cases where the body was opened by the veterinary surgeon before dispatch. A clean sack, old sheet, or several layers of paper are preferable to straw for packing. Sawdust, too, is a good packing material, but as it tends to retain heat the body must be cool before packing and all orifices plugged with cotton-wool.

3. The use of the unsterile destruction syringe may readily introduce the spores of such organisms as *Bacillus subtilis* or *anthracoides* directly into the blood stream. These spores have time to germinate before the body cools completely and the organisms multiply rapidly thereafter. It would therefore be worth while to use a sterile syringe for destruction if a *post-mortem* examination of the body is required.

4. Transport of the carcase inside the boot of a car without the free circulation of cool air. It is not always realised how high the temperature inside the boot of some cars can be, and we have seen a carcase rendered unfit for examination within a few hours of death by a long journey inside a closed car. It is, therefore, advisable to carry a carcase, suitably wrapped, either in a trailer or in a crate on the opened flap of the boot. When sent by rail the package should be placed in the van away from radiators and hot pipes where air can circulate freely round it.

It is hoped that these few suggestions will help to reduce the number of carcases rendered useless for ordinary laboratory examination by spoilage, and so increase the proportion of results which are satisfactory to all parties concerned.

Yours faithfully,

S. F. J. HODGMAN,
M. ELIZABETH DAVIES.

Animal Health Trust,
Canine Research Station,
Kennett,
Nr. Newmarket, Suffolk.

January 22nd, 1957.

Acid (and other) Firing

Sir,—The recent correspondence has been very interesting, but I sometimes wonder whether all firing is not a relic of barbarism, and to what extent the subsequent *enforced rest* enters into the matter of recovery to usefulness?

Yours faithfully,

WILLIAM TRIGGER.

Queen Street,
Newcastle,
Staffs.

January 28th, 1957.

Gut Oedema in a Litter of Four-day-old Pigs

Sir,—On September 18th, 1956, I observed gut oedema in a litter of 11 pigs, four days old. One of the pigs had suddenly been taken ill and died a few hours after the onset. A *post-mortem* examination revealed oedema in the spiral coil of colon and yellow diarrhoea. The stomach was nearly full of food of a more solid consistency. In four successive days the whole litter, except two, succumbed. Most of the pigs showed the typical symptoms of gut oedema with oedema in the eye-lids, staggering gait, or lameness in the legs, and oedema in the spiral coil of colon.

At the same time, in the same premises, two litters of 14-day-old pigs were affected with gut oedema.

Yours faithfully,

JOHANNES AUSTVOLL.

Stavanger,
Norway.

January 20th, 1957.

Hypomagnesaemia or Enterotoxaemia?

Sir,—The following notes may be topical in view of the approach of the lambing season. Hypomagnesaemia has been reported in ewes on rich leys, but I have seen only sporadic cases, occurring about a fortnight after lambing, and on indifferent pastures. In such cases the proof has been obtained by blood sampling before death, the *post-mortem* examination revealing no outstanding abnormalities. Last spring, however, I saw two cases which appeared typical of enterotoxaemia before and after death, yet a blood sample revealed that hypomagnesaemia had been present.

The ewes were full-mouthed, Welsh mountain type, which had lambed singles 9 and 14 days earlier. Both were seen on April 2nd. The first had been found frothing at the mouth and breathing heavily. When examined she was standing and clamping her jaws. The temperature was 107°; the pupil did not appear dilated. She gave a sudden quiver and died. A blood sample was taken immediately, which revealed serum magnesium 1.7 mg.p.c. and calcium 10.4 mg.p.c. The laboratory stated that the magnesium may have been even lower before death. On *post-mortem* examination the abnormalities noted were oedematous mesenteric and hepatic lymph nodes, and an excess of pericardial fluid containing a fibrin clot. Petechiae were present on the epicardium. A portion of intestine with contents was examined by the Veterinary Investigation Centre the next day. Their report stated that bacteriological examination showed a heavy growth of *Clostridium welchii* and coliform organisms in the bowel. A filtrate prepared from the contents failed to show any lethal toxins when inoculated into mice. Two other ewes had been found dead on this farm during the past few weeks. They were grazing hill pasture, supplemented with folded roots and cabbage. The flock was inoculated with *Cl. welchii* type D vaccine, and no further losses occurred.

At the second farm, 30 ewes had died during the previous two weeks. The flock was grazing "fairly good" pasture. The one in question was found in a state of collapse, giving an occasional convulsion, and grinding her teeth. The temperature was 108.2°, and the pupil dilated but sensitive to light. No response was shown to a compound mineral solution given intravenously. A blood sample taken before treatment showed levels of calcium 7.0 and magnesium 1.0 mg.p.c. serum, and phosphorus 6.8 mg.p.c. blood. Two hours later the ewe was dead, and a *post-mortem* examination was carried out. An excess of pericardial fluid with fibrin clot, and epicardial petechiae were again found. The endocardium showed ecchymoses and the lungs were congested, but the other organs appeared normal. A portion of intestine with contents was forwarded to the Veterinary Investigation Centre and arrived there the third day after death. Examination failed to show any evidence of enterotoxaemia. No further losses occurred in the flock, which was inoculated with *Cl. welchii* type D vaccine, and moved to fresh ground.

Were these fatalities the result of hypomagnesaemia, enterotoxaemia, or both? I do not know, but I would urge caution in pronouncing a diagnosis of enterotoxaemia on the "diagnostic" pericardial fibrin clot.

I would like to express my thanks to the staff of the Biochemistry Department, Veterinary Laboratory, Weybridge, and of the Veterinary Investigation Centre, Cardiff, for examining the specimens. The cases were seen while visiting Mr. D. H. Williams, M.R.C.V.S., Neath, to whom I am grateful for permission to publish the details.

Yours faithfully,

LIONEL A. HEMSLEY.

c/o 312, Lower Addiscombe Road,
Croydon,
Surrey.

January 22nd, 1957.

ADVERTISERS' ANNOUNCEMENTS

THE DISTILLERS COMPANY (BIOCHEMICALS) LIMITED announce that their Sales Division has been transferred to their new premises, Broadway House, The Broadway, Wimbledon, S.W.19 (Telephone: Liberty 6600). All correspondence on sales matters should be sent to the above address. Orders may be sent either to the Wimbledon or Speke depots.

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